TV Signal Level Meter

Operator's Manual
ZMCP 2.0

Please read this manual carefully

Prior to using this product.

The technical specifications and operating methods included in this manual are subject to changes without notice. In case of any inquires after a period of usage, please consult the distributor or manufacturer.

Learn to use

Please be familiar with the functions of the instrument panel prior to operation.

RF input terminals

RF signal will be measured being input through connector. The connector can be replaced and installed with TAC or F connector.

LCD Screen

Large character LCD with user-friendly back light that can switch automatically. Moreover, the LCD contrast can adjust automatically.

Numeric key

■-■ Ten numeric keys.

Function key

■ Trunk line voltage and battery voltage measurement key

■ TILT measurement, Dual channel measurement

■ Carrier to Noise Ratio measurement key

← Channel selection, audio carrier, and A/V measurement

→ Frequency input and parameter selection

■ Decimal point

■ Clear key

■ Up

■ Down

Charger jack

Insert the charger connector to the charger jack to provide external power for the meter when the meter is on, it will charge the meter when the meter is power off.

Charging Indicator

While the meter is charging, the indicator is red.

Overview

The meter is designed for test of DVB-C network. It can measure channel power, MER and BER of digital channel and single channel, dual channel, A/V, C/N, voltage of analog channel. It is an ideal instrument for cable TV maintenance.

Carrier to Noise/Ratio measurement key

Channel input key and Enter key

Trunk line voltage and battery voltage

TILT measurement, Dual channel measurement

Function key and Setup key

Frequency input and parameter selection

Clear key

Numeric keys

Decimal point

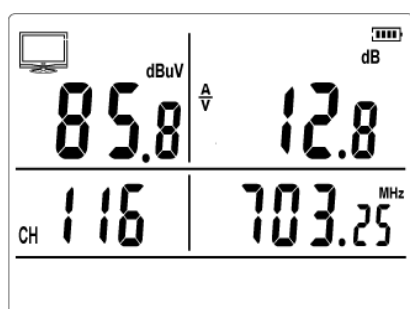Power Switch Button

SET key

UP / DOWN Key

Operation of measurement

Starting up

To turn meter on, Press Power Switch button and hold until the meter "buzz" and show de serial number in the display. Then it accesses the mode of single channel measurement automatically. To turn meter off, press Power Switch button at any time.

0Single channel measurement

Using [ ] and [ ] , [ ] and [ ] key enter the previous or next channel, or using numeric key input channel number and press [ ] key to enter desired channel.

Note: Channel number must be from preset channel plan, otherwise it's invalid.

Switch between digital channel and analog channel

Hint: Press key to set the current channel to analog channel and digital channel. Setting will be saved for next use.

Analog channel - video carrier level test

In this mode, the lower screen displays the channel number and it's frequency, the upper screen displays the signal level of video carrier and A/V ratio.
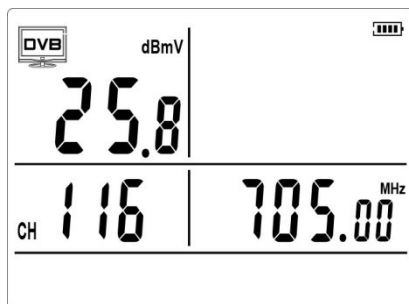
Analog channel - audio carrier level test
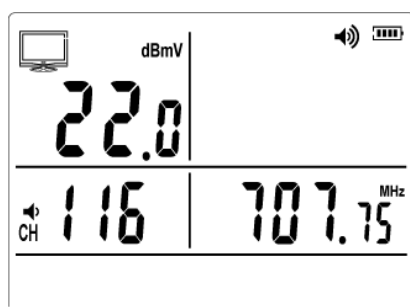
Press [ ] key, the unit will show signal evel of audio carrier and frequency.
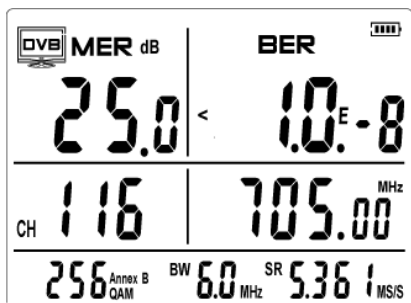
Hint: In audio carrier level test mode, using [ ] key adjust the volume of speaker.

Digital channel - power test

If the current channel is analog channel, using [ ] key switch to digital channel. In digital channel test mode, the channel number, frequency, channel average power, as well as a "DVB" symbol on the left top.

Analog channel - audio carrier level test

In digital channel power test mode, press ▪ key to enter QAM test mode which can give result of MER, BER.

Press ▬ key to get back to the digital channel average power test mode.

Settings of the current channel will show in the bottom of the screen.

Digital channel - QAM test: change settings

Press SET key to enter the setting mode of parameters.

The QAM item will blink, using ▪▪ keys toggle among the QAM type options : 16QAM/32QAM/64QAM/128QAM/256QAM

Press SET key again to enter band width setting, the BW item will blink, using numeric keys enter a number between 6MHz to 8MHz.

Press SET key again to enter symbol rate setting, the SR item will blink, enter a number between 1 MHz to 9MHz here.

Single frequency level measurement.
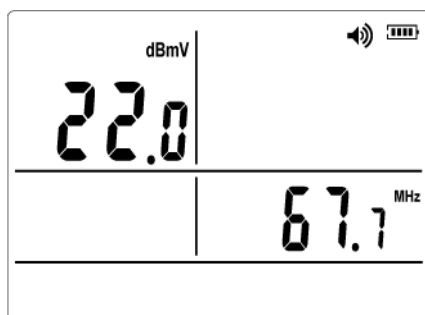
In the channel test mode, using numeric keys input frequency number directly and press ▬ to confirm, the unit will enter single frequency level test mode.

Using ▪⊕ keys turn the frequency.In this status, press ▬ key you can change the step of frequency tuning. The step interval will toggle in following sequence: 100MHz, 10MHz, 1MHz, 100 KHz, 10 KHz.
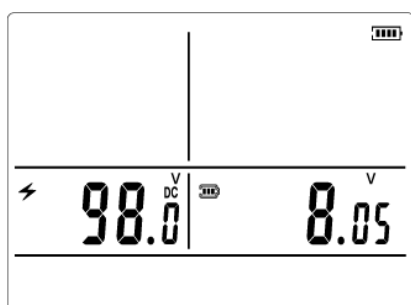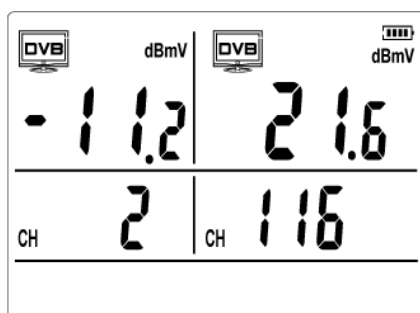
Voltage measurement

Press ▪, the meter will access to voltage measurement mode. It will display the trunk voltage with automatic detection of "AC" or "DC" and the battery voltage. When there is no trunk line connected it will display on the battery voltage. **Press any other function key to exit the voltage measurement status.**

Tilt measurement

In the status of level measurement,   press ▇ to access to TILT measurement mode.

The measured signal levels of two channels are displayed in the screen, the channel numbers are displayed at the bottom. The user can compare the two channels in this mode; it is also called TILT measurement.

In this mode, press ▇ button to enter the status of inputting measuring channels. Pressing ▇, the cursor "CHV" blinks and toggles between left channel and right channel, directly input the channel number by numeric buttons or push arrow keys to adjust the channel number.

Carrier to Noise Ratio Measurement

In the signal level measurement mode, press ▇ button to enter Carrier to Noise Ratio measurement mode, as showed in fig.
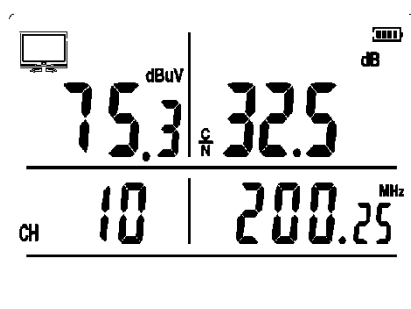
In signal channel measurement mode, the channel number is displayed at the bottom left corner; the video carrier frequency is displayed at the bottom right corner. The left is measured signal level and the right is C/N value.

1. This function is only available when input level is higher than 70dB.

2. Theatrically, the noise level should be tested as the carrier turned off, but the meter detects the noise with the carrier on, thus the test result may not be accurate.

3. When entering C/N mode, C/N blinks when the meter is in process of calculation.

2.7 Power Supply

The meter is equipped with a high performance rechargeable battery. The voltage of batter can be monitored automatically, the meter will alarm when power is low. Press the voltage measurement key, the instrument shall show the battery voltage.

The meter powers off automatically if there is no operation for set power-off time.

Please use only the charger provided with the meter, using any other battery charger may overheat or distort the meter, or cause fire, injury or harm to the environment and will void the warranty. The indicator on the front panel will turn red when the instrument is being charged. The charging can be done when both the meter is power on and power off.

Charging time is approximately 8 hours. Remove the Connectors between the charger and the AC current and the meter when the charge is complete.

If the charger is connected to the AC current for a long time the charger will enter protection status and stop charging. You have to reconnect the charger to the AC current to charge again.

Technical Documents

Frequency Range	5MHz-870MHz
Frequency Resolution Ratio	50KHz
Measuring Hand-width	280KHz
Measuring Range:	25dBmV-120dBmV
Measuring Accuracy	＜±2dB
Resolution ratio	0.1dB
Mode of Detection	peak detection
Input Impedance	75Ω
C/N	
Signal Input Range	＞70dBmV
Measuring Accuracy	±2.5dBmV
Input Range	30-80V(AC/DC)
Measuring Accuracy	±2V
Input Range	30-80V(AC/DC)
Measuring Accuracy	±2V
Resolution ratio	1V
DC power supply	DC7.2V/1.5Ah (Built-in rechargeable battery)
Storage temperature	-10--+50oC
Storage humidify	40%--80%RH

Attention:

1. Keep the surface of the instrument clean. Do not use organic solvent, acid, alkali and solvent to clean the surface of the instrument.

2. The instrument should avoid vibration or shaking. Do not use force on the LCD window, so as not to damage the screen.

3. Charge batteries every 3 months if meter is not used for an extended period of time.